Louisiana Grade 9

FlyBy Math™ Alignment
Mathematics Grade-Level Expectations

Number and Number Relations

Grade-Level Expectations	*FlyBy Math™* Activities
7. Use proportional reasoning to model and solve real-life problems involving direct and inverse variation (N-6-H)	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios.

Algebra

Grade-Level Expectations	*FlyBy Math™* Activities
9. Model real-life situations using linear expressions, equations, and inequalities (A-1-H) (D-2-H) (P-5-H)	--Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system. --Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
13. Translate between the characteristics defining a line (i.e., slope, intercepts, points) and both its equation and graph (A-2-H) (G-3-H)	--Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system. --Interpret the slope of a line in the context of a distance-rate-time problem.
15. Translate among tabular, graphical, and algebraic representations of functions and real-life situations (A-3-H) (P-1-H) (P-2-H)	--Choose among tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes. --Use tables, bar graphs, line graphs, a Cartesian coordinate system, and equations to model aircraft conflicts and predict outcomes.
16. Interpret and solve systems of linear equations using graphing, substitution, elimination, with and without technology, and matrices using technology (A-4-H)	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. --Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system. --Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates.

Measurement	
Grade-Level Expectations	***FlyBy Math™* Activities**
21. Determine appropriate units and scales to use when solving measurement problems (M-2-H) (M-3-H) (M-1-H)	--Calculate and measure the position and time of simulated aircraft. Represent that motion using tables, graphs, equations, and experimentation.

Geometry	
Grade-Level Expectations	***FlyBy Math™* Activities**
23. Use coordinate methods to solve and interpret problems (e.g., slope as rate of change, intercept as initial value, intersection as common solution, midpoint as equidistant) (G-2-H) (G-3-H)	--Apply mathematics to solving distance, rate, and time problems for aircraft conflict scenarios. --Interpret the slope of a line in the context of a distance-rate-time problem. --Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system.
25. Explain slope as a representation of "rate of change" (G-3-H) (A-1-H)	--Interpret the slope of a line in the context of a distance-rate-time problem.

Patterns, Relations, and Functions	
Grade-Level Expectations	***FlyBy Math™* Activities**
37. Analyze real-life relationships that can be modeled by linear functions (P-1-H) (P-5-H)	--Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system.
39. Compare and contrast linear functions algebraically in terms of their rates of change and intercepts (P-4-H)	--Represent distance, speed, and time relationships for constant speed cases using linear equations and a Cartesian coordinate system. --Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates. --Interpret the slope of a line in the context of a distance-rate-time problem.
40. Explain how the graph of a linear function changes as the coefficients or constants are changed in the function's symbolic representation (P-4-H)	--Use graphs to compare airspace scenarios for both the same and different starting conditions and the same and different constant (fixed) rates.